

What is claimed is:

1. An apparatus for perforating or severing a web, the apparatus comprising:

(a) a mechanism for supporting a web, the web having a first edge and a second edge, the web being adapted for travel upon the mechanism;

(b) a frame adjacent to the web;

(c) at least one laser mounted upon the frame, the laser being configured for directing a beam of light upon the surface of the web to form at least one severed portion upon the web.

2. The apparatus of claim 1 in which the apparatus is configured to sever the web continuously from the first edge to the second edge.

3. The apparatus of claim 1 in which the laser is configured to form a plurality of severed portions upon the web in interrupted sequence, enabling creation of a perforation line in the cross direction of the web, whereby bonded portions in the perforation line are positioned between severed portions.

4. The apparatus of claim 3 in which the laser is adapted to form multiple perforation lines positioned generally parallel to each other and in the cross direction of the web, in which the perforation lines are provided at spaced intervals.

11. The apparatus of claim 1 in which the web includes a cross direction from the first edge to the second edge, whereby the laser is configured to direct the beam of light at an angle that deviates from the cross direction.

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16. The system of claim 13 in which the speed of travel of the

17. The system of claim 13 in which the speed of travel of the

18. The system of claim 12 in which the web conveying means

19. The system of claim 12 in which the web conveying means

20. The system of claim 12 in which the web conveying means

21. The system of claim 12 in which the laser provides a light

22. A method of severing or perforating a paper web, the method

(a) providing a web having a cross direction across its width and

(b) directing a beam of light from a laser upon the surface of the

(c) severing the web in at least one location; and

(d) thereby forming a web having a severed portion.

23. The method of claim 22 in which step (b) includes providing an array of lasers oriented in the cross direction of the web, in which said array of lasers each are directed at predetermined zones of the web.

24. The method of claim 23 in which the web is subdivided into said zones oriented along the machine direction of the web, further wherein the directing step (b) further comprises providing multiple beams of light from said laser array, wherein each successive laser in the array is configured to provide a beam upon respective and successive zones of the web.

25. The method of claim 24 in which the providing step (a) comprises providing the web at a fixed distance from the laser array.

26. The method of claim 25 in each zone of the web comprises a first edge and a second edge, further wherein the beams of light are directed to advance from a first edge of a respective zone to a second edge of said zone, whereby beams originating in successive lasers in the array are directed at respective zones upon the web surface.

27. The method of perforating a paper web, the method comprising:

(a) providing a paper web having a cross direction across its width, and a machine direction along its length, the paper web being positioned upon the surface of a moving carrier fabric;

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28. The method of claim 27 in which perforations are formed in each respective zone, wherein the perforations connect to form a perforation line across the width of the paper web.